NEWS

A control house at New York's Tallmans Island sewage treatment plant, which opens April 22

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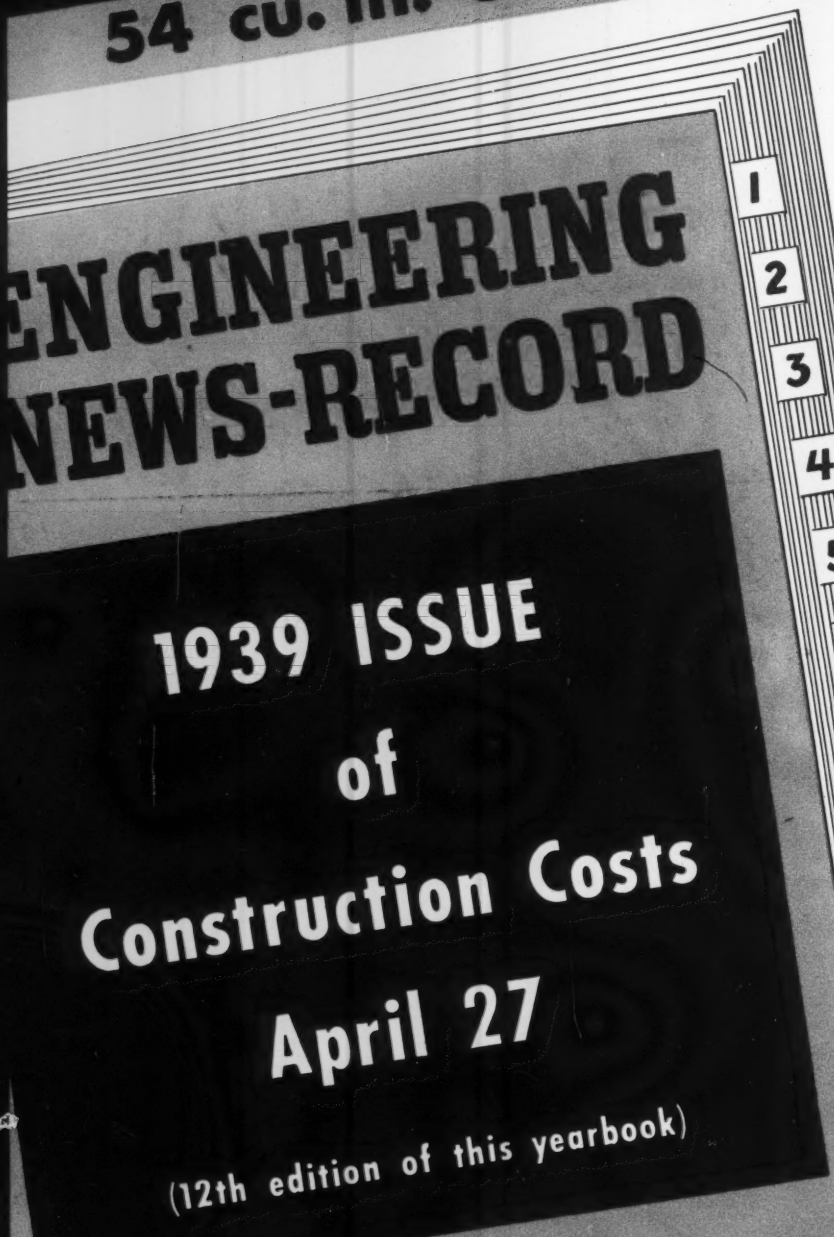

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ENGINEERING NEWS-RECORD

NEWS

Volume 122 APRIL 20, 1939 Number 16

NOTEBOOK NEWS

Quick Surveys of Construction Events

▶ Valuation engineers will read the Supreme Court's decision in the Pennsylvania rate case with interest because it is the first important rate case in which the new justices have participated. The famous *Smyth vs. Ames* decision still holds but there are clear indications that it is soon to be discarded.

▶ Power is to be generated at Parker Dam. Though the big Boulder plant still is not up to capacity it is so far from a growing load center as to make power development at the lower dam attractive.

▶ More money for house construction is the principal item of interest in this week's news. By extending the life of the Federal Housing Authority and permitting it to increase its outstanding mortgage insurance contracts by a full billion dollars the expanding house building market is given new impetus.

▶ The fine points of the Illinois sales tax as it affects contractors are set forth in regulations issued by the state department of finance, p. 6.

▶ The current controversy over sanitary fill versus incineration of garbage has shifted to Detroit temporarily, a city council committee having raised question as to why the city's incinerators should not be reopened.

▶ A fight over federal control of water power is brewing in North Carolina. With the support of the Governor, taxpayers have begun suit to test the federal power commission's right to grant a license for High Point's power plant.

R. A. Wurgel

BUILDING A NEW APPROACH TO GEORGE WASHINGTON BRIDGE

A MILE EAST of the Manhattan end of the George Washington Bridge in New York a new approach for the Hudson River crossing is being built through Highbridge Park. The structure shown here is the south portion of a new link connecting the Harlem River Speedway with the 178th St. approach tunnel (*ENR* Apr. 13, 1939, p. 62). Wood & Hagan, New York is contractor for the Port Authority.

Vermont Eliminates Fund For Flood-Control Dispute

The $67,500 which the Vermont House of Representatives gave Governor Aiken of Vermont early this year to use as a defense fund in his dispute with the federal government over flood control projects in the state was eliminated last week from the general appropriation bill.

Billion Added To FHA Loans

House bill extends life of mortgage insurance body for two years

A bill extending the life of the Federal Housing Authority until July 1, 1941, and permitting an increase in its total outstanding mortgage insurance contracts from $3,000,000,000 to $4,000,000,000 was passed by the House of Representatives April 12. The measure makes a number of changes in the present FHA set-up, of which the most controversial is a requirement

(*Continued on p. 10*)

• • •

Statewide Geodetic Survey Completed in Georgia

The State of Georgia has completed its statewide geodetic control survey, WPA Administrator Harrington announced Apr. 20. The Georgia statewide survey is the first to be completed of fourteen under way with relief funds since 1933.

The survey has established 13,000 monuments providing reference points every mile or so along nearly all the important highways and railroads of the state. An 1,100-page volume has just been published by the state, including descriptions of the Coast and Geodetic Survey monuments, the monuments established by the supplementary WPA survey, and the monuments of all other government surveys which have been made in the state.

Surveys to establish intermediate monuments between those of the U. S. Coast and Geodetic Survey are under way in Alabama, Arkansas, Connecticut, Florida, Iowa, Louisiana, Massachusetts, New Jersey, North Carolina, Oklahoma, South Carolina, Tennessee and Virginia those in Connecticut and Massachusetts are approaching completion.

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Utility Purchase By TVA Aided

Senate passes measure consolidating bond powers but not increasing total

An amendment to the Tennessee Valley Authority Act that will clarify the right of TVA to issue bonds covering its share of the purchase price of private power facilities was approved by the Senate, April 13.

Under the present law TVA has power to issue $50,000,000 in bonds to finance construction of dams, steam stations, and other facilities and for the purchase of transmission lines, and also to issue an additional $50,000,000 for loans to municipalities and cooperatives. The amendment proposes to lump these two provisions into a single authorization to issue $100,000,000, or any part thereof, for the construction or acquisition of electrical facilities, thus averting any questions that might arise over the purchase of types of facilities not included under the present wording.

The amendment would also legalize the acquisition of one generating plant on a tributary of the Cumberland River that is now a part of the Tennessee Electric Power Co. system. Some question had been raised as to the authority of TVA to take over this plant because it is outside of the Tennessee valley.

The amendment also extends the time limit for issuing the bonds from Aug. 31, 1940, to Jan. 1, 1941, and removes a technical provision objected to by the Treasury.

An attempt by Senator Bridges of New Hampshire to limit the authorization of bonds to those needed to cover purchase contracts in existence at the date of enactment of the bill was defeated.

Local tax payments

Tax payments by TVA to state and local authorities were not covered by the bill, but were considered in the debate. Senator Norris stated that TVA itself pays, as required by law, not less than 5 per cent and sometimes 7½ per cent of its gross revenues to the states of Tennessee and Alabama in lieu of taxes, and that all contracts between TVA and local distributors require similar payments by the distributor.

The board of directors of TVA announced Apr. 13 that because extensive transfers of electric properties to public agencies would take place in the near future, an increase to some higher percentage of the present 5 per cent payments to the states would be justified. The board plans a series of public conferences with representatives of state and local agencies to consider the method of distributing TVA payments within the state as well as the amount of such payments.

The board has decided to recommend to Congress that the states of Kentucky, North Carolina, Mississippi and Georgia be granted the same payments now made to Alabama and Tennessee.

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Contract Let for Big Dam of Santee-Cooper Project

A contract for the Pinopolis Dam, power house and navigation locks of the Santee-Cooper hydro-electric project in South Carolina was let April 14 to the Central Engineering Co., of Davenport, Iowa on a bid of $4,172,800. Also let at the same time was a dike construction contract for $138,675 to W. C. Shepherd of Atlanta. The project is being built by the South Carolina Public Service Authority, using a combined loan and grant of $34,300,000 from the PWA.

The Santee-Cooper project calls for a dam across the Santee River to divert its waters through a canal into a reservoir formed behind Pinopolis Dam on the Cooper River, the development of power at that dam and the improvement of navigation in the Cooper and Santee Rivers. A contract for the power equipment was let early this year.

F. R. I. Sweeney is chief engineer of the authority and the Harza Engineering Co. is acting as consultant. Kenneth Markwell is PWA engineer.

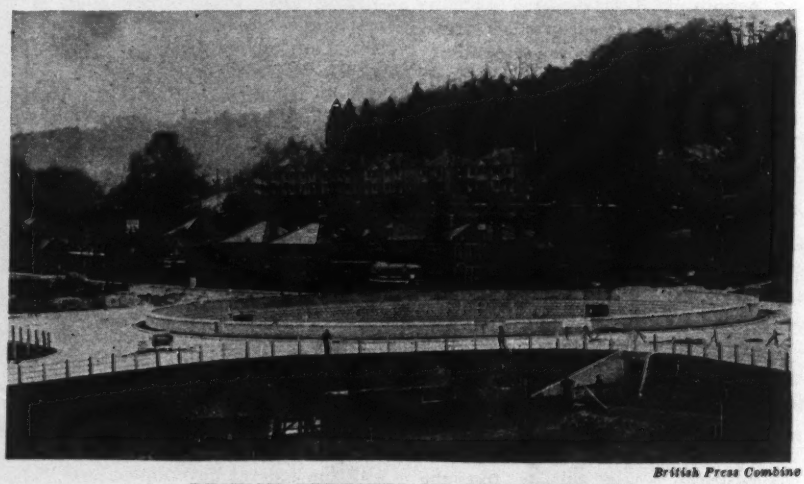
Power to Be Generated At Parker Dam

Immediate installation of a hydroelectric power plant at Parker Dam on the Colorado River has been decided on by the Metropolitan Water District of Southern California. The decision was reached, it was announced, because of a critical shortage of power in central Arizona.

A contract has been signed with the federal government, under which the government will supply funds to build a plant at Parker Dam and also a transmission line to Phoenix, to supply a utility and an irrigation district.

Parker Dam was built with water district funds under an agreement by which the federal government received half of the power privileges at the dam and the water district the other half. Under the new contract the government will build and operate for a number of years both its own and the water district's power generating units and will credit the district with its share of the power revenues. Whenever in the future the district needs additional power for its pumping plants on the Colorado Aqueduct, half of the power developed at Parker Dam will revert to it. At present the district is buying Boulder Dam power to operate the pumping plant.

Parker Dam, completed last summer, forms the lake from which water is drawn for the Colorado River Aqueduct. The power plant foundations were built during the construction of the dam.



British Press Combine

BRITISH PEDESTRIANS GET A BREAK

UNUSUALLY careful provision is made for pedestrian traffic in the design of this traffic circle in England. Traffic from six important highways flows in a clockwise direction around a 180-ft. diameter island on an elevated roadway 40 ft. wide. Four pedestrian subways lead under the highway to a central island, where footpaths connect the different entrances. One of the underpasses is visible in the immediate foreground and two others can be seen on the far side of the elevated highway structure.

Right to Build Hydro Plant At High Point Challenged

The right of the town of High Point, N. C., to build a six million dollar hydro-electric power plant on the Yadkin River in North Carolina has been challenged in a suit brought by commissioners and taxpayers in counties up-stream from the proposed power plant. High Point has obtained funds from the PWA for the power project and has begun the condemnation of lands for the reservoir. It is acting under a license from the Federal Power Commission which last year ruled that the Yadkin is navigable.

Governor Clyde R. Hoey of North Carolina has declared that the state will enter the suit to determine whether the federal government or the state has jurisdiction over the stream.

• • •

Pennsylvania Stops Work On Big Prison Job

Acting on orders from Governor James, the Pennsylvania General State Authority has ordered all work halted on the new state prison which is under construction at Mount Gretna. The prison is one of a considerable number of building projects undertaken by the authority under the previous state administration.

Seven contracts totaling $2,435,000 have already been awarded on the project and work has been started. The Governor has suggested, however, that the state might save money by making financial settlement with contractors.

• • •

TVA Engineers Transferred As Gilbertsville Is Speeded

As a result of expanded construction activity at Gilbertsville Dam and on the Watts Bar project, six engineers of the Tennessee Valley Authority have been shifted to new positions. Lee G. Warren, project engineer at Chickamauga Dam, has been made project engineer of both the Chickamauga and Watts Bar projects.

At Gilbertsville, Eugene A. Prokop, acting construction engineer on the project, has been made reservoir construction engineer. Benjamin S. Philbrick, who has been construction superintendent at Guntersville Dam, is being made construction superintendent at Gilbertsville, while James B. Hays, construction engineer at Chickamauga Dam, becomes construction engineer of the Gilbertsville project.

Hays will be replaced at Chickamauga by Joseph K. Black, formerly assistant construction engineer there.

Frank W. Webster, principal highway engineer, has been made head highway engineer.

Wide World Photo

NEARING THE END OF A BIG JOB

ENGINEERS and officials who have been active on construction of Bronx-Whitestone bridge gather to inspect the project, which is due to open late this month. Left to right above are O. H. Ammann, chief engineer of the Triborough Bridge Authority; Robert Moses, sole member of the authority and New York City park commissioner; H. W. Hudson, in charge of construction for the authority; M. J. Madigan, consulting engineer; and James A. Burke, city councilman.

The Bronx-Whitestone suspension bridge crosses Long Island Sound to form a northern connection between the borough of the Bronx on the mainland and the borough of Queens.

State Utility Act Upheld by Court

U. S. Supreme Court upholds Pennsylvania Utility Commission in fixing temporary rates

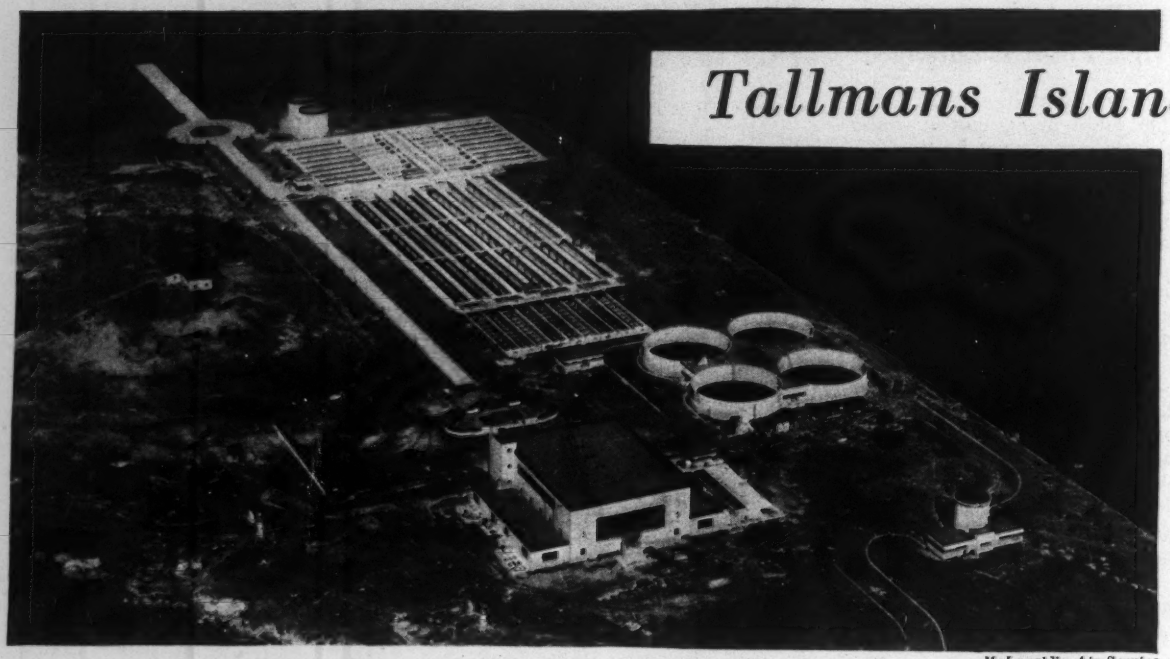
The United States Supreme Court, Apr. 17, upheld the right of the Pennsylvania Public Utility Commission to fix temporary rates under a state act passed in 1937. Under that act the commission, in July, 1937, required the Edison Light & Power Co. of York, Pa., to adopt a rate schedule which would produce a reduction of $435,000 in its annual gross operating revenues. Subsequently this order was permanently enjoined by the district court for the Eastern District of Pennsylvania on the ground that it was unconstitutional because (1) it violates the procedural requirement of due process, (2) it fails to permit the utility to earn a fair return on the fair value of its property used and useful in the public service, (3) it confiscates the company's property, and (4) it is not supported by substantial evidence.

High Court Disagrees

The Supreme Court found no support for any one of these conclusions and reversed the injunction order of the district court. On the question of fair value, the Supreme Court said, in part, "The [district] court declared Section 310A [of the Pennsylvania act] unconstitutional because it permitted the commission to fix a temporary rate based upon the single factor of original cost less depreciation. The commission, however, did not confine itself to this one element in setting the fair value of the appellee's property, for the purpose of temporary rates, at $5,250,000. It gave weight to reproduction cost, original cost, going concern value and the necessity for working capital, and it allowed on this rate base a return of more than 6 per cent. . . . The commission made no specific allowance for going concern value. It did, however, state that it had weighed the going concern value with other factors to determine fair value. It gave practical effect to this consideration when it fixed fair value several hundred thousand dollars in excess of its average of original and reproduction costs, both depreciated.

"The utility operates in a stable community, accustomed to the use of electricity and close to the capital market, with funds readily available for secure investment. Long operation and adequate records make forecasts of net operating revenues fairly certain. Under such circumstances a 6 per cent return cannot be confiscatory."

Tallmans Island



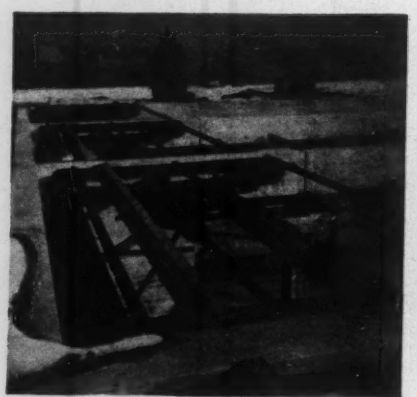
McLaughlin Air Service

GEOMETRICAL FIGURES dominate the layout of most sewage disposal plants, and no exception is taken to this rule at Tallmans Island, where New York's newest plant is being dedicated April 22.

NEW YORK'S newest and finest sewage treatment plant goes into operation April 22. It combines the best of science and showmanship, and gives to the city a public works improvement of utility as well as beauty. Designed to remove pollution from Flushing Bay and the East River adjacent to the World's Fair site, its completion was planned to occur previous to the opening of the Fair located nearby.

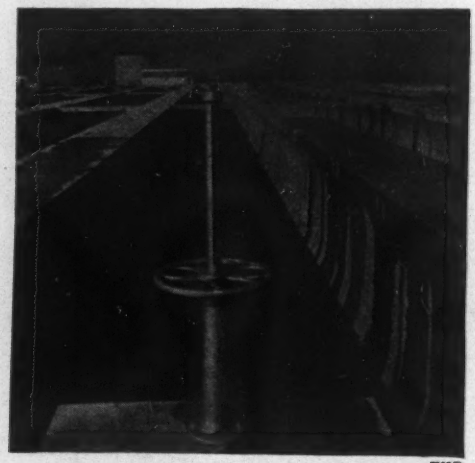
The Tallmans Island plant is a 40 m.g.d. activated-sludge treatment works. Sludge gas, a by-product of the digestion process, will be used for the production of power; for this purpose eight gas engines with a total capacity of 3,500 hp. are installed. The plant will serve a population of about 300,000, and it cost $3,850,000.

Particularly noteworthy is the architectural treatment of the structures, examples of which are pictured on these pages. For complete design details of



ENR

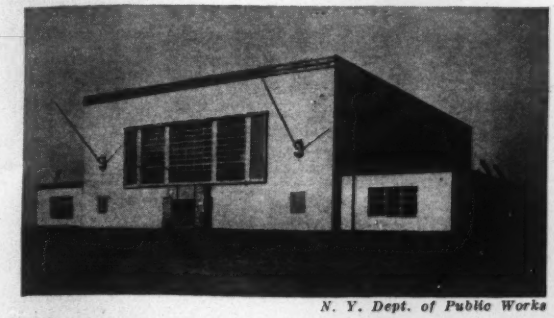
CONVEYOR MECHANISM in the primary settling tanks which removes settled sludge continuously and also skims the liquid surface. The latter operation keeps the tank surface free of scum and grease.



ENR

ONE of the eight aeration channels in which settled sewage is oxidized with activated sludge and air.

Sewage Disposal Plant Makes Its Debut



N. Y. Dept. of Public Works

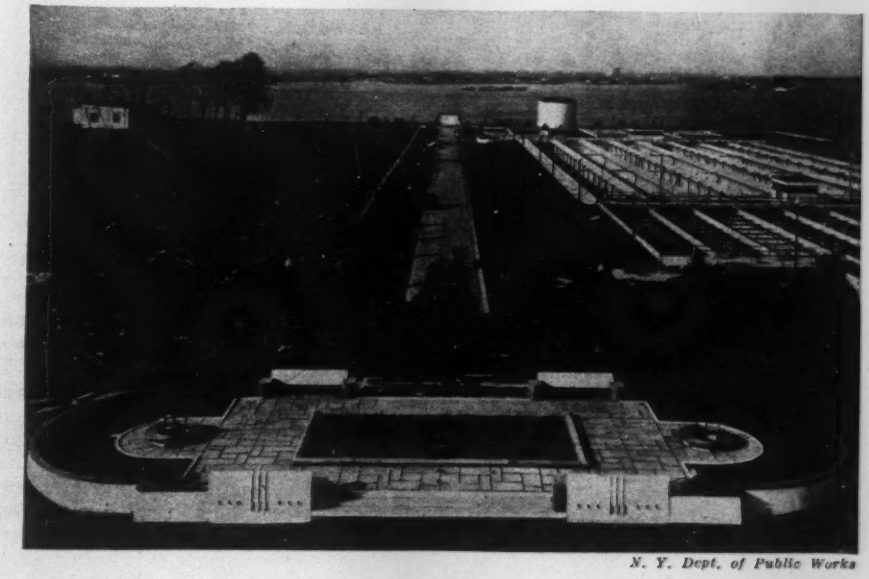
POWER PLANT where sludge gas is utilized to produce electricity for operation of pumps, aeration tank blowers, and other plant equipment.

ENR Staff Photo

HOUSING for the elevated grit storage tank and other facilities used for the final removal of grit.

the plant, see *ENR*, Sept. 30, 1937, p. 541.

The plant was designed by the New York City Department of Public Works, and has been financed exclusively with city funds. The principal contractors on the plant and structures were the Northeastern Construction Co., and the Caye Construction Co., Inc. Irving V. A. Huie is Commissioner of Public Works, and Richard Gould is deputy commissioner in charge of sewage disposal.



N. Y. Dept. of Public Works

A NOTE in tune with the pleasing architectural treatment of the plant in the fish pool in the foreground. To the right are primary settling tanks and on Long Island Sound in the middle background is the pier from which barge loads of digested sludge will be taken for disposal at sea.

Engineering Bills Before Congress

CCC extension, Florida Canal, and public works department bills reported out of committee

Matters of interest to the engineering profession that will come before Congress for consideration in the near future are forecast by the following committee actions:

A special Senate committee on unemployment and relief approved a bill to reorganize the relief set-up and liberalize the social security laws. The committee eliminated a proposal to create a new federal department of public works to take over the functions of the PWA, WPA, Bureau of Public Roads, and the public buildings branch of the Treasury in favor of a new agency which may be placed in an existing department.

The House labor committee on April 17 approved a bill to extend the life of the Civilian Conservation Corps for five years. A provision placing administrative personnel under Civil Service was eliminated.

The House committee on rivers and harbors approved on omnibus rivers and harbors authorization bill including projects costing about $69,000,000.

The same committee has approved a bill to authorize construction of the Florida ship canal.

The regular Interior Department appropriation bill for the coming fiscal year, already passed by the House, has been passed by the Senate but the House must still give approval to several changes including increasing the funds for the Bureau of Reclamation by $11,150,000 and the National Park Service by $1,086,000.

On all these measures many changes are apt to take place before final approval by both houses.

• • •

New York WPA Foremen Get Advanced Training

A five months' course in foremanship was completed last week by 4,400 supervisory employees of the New York City WPA. Designed to broaden the employees' knowledge of general construction methods and supervision, the foremanship training program was started in the city in 1937. At first, the courses were limited to the "handling of men on the job." When the present course started last fall, it was decided to make a complete course in advanced construction methods available to WPA employees.

Attendance at the courses was not mandatory and employees attended in the evenings on their own time. The students, divided into groups of 20 to 25 men, met once a week for an hour and a half in the various field offices of the WPA under the direction of 42 conference leaders. Leaders were chosen from experienced foremen on the WPA staff.

• • •

Minnesota Packing Plants To Pay Sewage Costs

The packing industries of the city of South St. Paul, Minn. have effected an agreement with the city under which a sewage disposal plant will be constructed at once at an estimated cost of $960,000. The packers agree to pay 65 per cent of the construction cost and 90 per cent of the maintenance cost, the city paying the remainder. South St. Paul has a population of about 10,000, while the sewage from the packing plants there is estimated to be equivalent to that from a population of 200,000.

South St. Paul was omitted from the metropolitan sewage district of Minneapolis-St. Paul and environs when that body was formed in 1933, because the governor felt that the packing plants would receive too liberal treatment if they were handled in the same way as other industries in the district. The Minneapolis-St. Paul disposal plant went into operation last June.

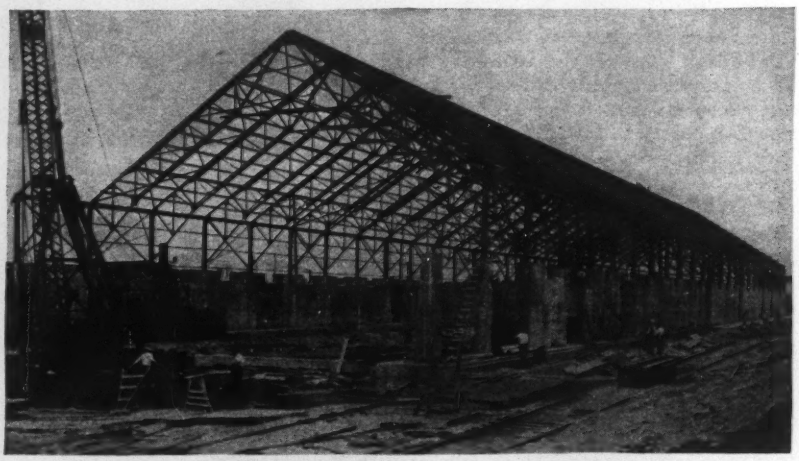
Contractor's Liability On Sales Tax Explained

Regulations clarifying the effect of the Illinois State Supreme Court's decision of last February (*ENR*, Mar. 2, 1939, p. 69) that contractors need not pay the state's 3 per cent sales or occupation tax on materials they purchase, have been issued by the Illinois State Department of Finance.

The Illinois occupation tax is a 3 per cent tax which is paid by retailers on the amount of their sales to consumers. The court, in the Herlihy Mid-Continent Co. case, held that a contractor erecting a structure is the ultimate consumer of materials which become embodied in the structure. The contractor does not, therefore, have to pay the occupation tax, which instead is paid by his material supplier. With respect to fixtures attached to a building, the department holds that the contractor is a retailer.

Amplifying the distinction between materials and fixtures, the department says that materials "are defined as tangible personal property which, when combined with other tangible personal property, loses its identity and becomes an integral and inseparable part of a completed structure."

Fixtures "are defined as things which are necessary to a building or other real estate and which do not lose their identity as accessories when placed or installed."



NEW DOCK FACILITIES FOR MOBILE

CONSTRUCTION is proceeding rapidly on a new $300,000 main storage plant for the bulk handling system at Mobile operated by the Alabama State Docks. The building is being erected with the aid of a $135,000 PWA grant.

The bulk handling system, especially designed to handle nitrates, potash, salt cake, phosphorus, bog ore, and special sands, provides for bulk handling of materials from ships to storage within the plant to car bins and packing bins and thence to railroad cars for shipment to the interior.

The storage building, a reinforced concrete and steel structure, is being built by Rust Engineering Co. of Pittsburgh, under the supervision of J. B. Converse & Co., engineers and consultants for the City of Mobile. Completion of the entire plant is expected by early fall.

WASHINGTON HIGHLIGHTS

Special reports by Paul Wooton

CONSTRUCTION of 86 naval public works projects at a total cost of $45,024,000 is authorized in a bill which passed the House April 13. These include drydocks, barracks, storage buildings, supply depots and other facilities along both coasts and on various off-shore islands including Hawaii, Cuba, and the Virgin Islands. The bill now goes to the Senate for consideration.

METROPOLITAN areas of 500,000 or more population would receive the benefit of the same increase in minimum costs on USHA low-rent housing projects that is now granted to cities of a half-million population under the terms of a bill passed by the Senate on April 13. At present, the cost limits of $1,000 per room and $4,000 per family dwelling unit are increased to $1,250 and $5,000, respectively, only in the larger cities. It is contended that this works a hardship on developments outside city limits but still within the influence of city costs. The bill must be acted upon by the House.

THE GRAND RIVER DAM AUTHORITY last week received a payment of $1,000,000 from PWA to continue construction of the Grand River Dam near Pensacola, Okla. The action halted local rumors that PWA support of the project would be withdrawn because of the recent reorganization of the authority by the state legislature (*ENR*, Apr. 13, 1939, p. 36).

ASSISTANT SECRETARY of War Johnson on April 11 transmitted to Congress a proposed draft of legislation to authorize financial cooperation of the United States with the Republic of Panama in the construction of a highway between Chorrera and Rio Hato. Located entirely outside of the Canal Zone, the road would be useful as a defense measure. The amount of the United States contribution would be limited to $4,500,000.

• • •

Ohio to Reorganize Highway Department

The Ohio highway department system of maintaining a resident engineer in each county of the state would be abolished under the terms of legislation which has passed both houses of the state legislature and is now before the lower chamber for consideration of Senate amendments. Introduced with the sponsorship of the highway department, the measure is expected to save about $139,000 annually.

Under the new system of organization, the state would be divided into five districts, each headed by a district engineer receiving $4,500 a year. Substituted for the county resident engineers would be 25 division engineers receiving $4,000 a year. Eighty-eight maintenance districts would each be headed by an engineer drawing a salary fixed by the state highway director.

The title of the assistant highway director would be changed to chief engineer and his salary increased from $5,000 to $6,000. The titles of the four present deputy directors would be changed to assistant chief engineer, with a salary increase from $4,500 to $5,000.

Ruby Arnold Photo

WHEN IS A ROAD NOT A ROAD?

WHEN IT'S A CANAL. Where the new circumferential highway around Brooklyn and Queens runs along the marshy south shore of Long Lsland, it has been necessary for the contractors to excavate the soft meadow mat and cast the material on the side. Suitable foundation material will then be filled into the ditch thus created.

Of the two channels in the distance, the nearer, Plumb Beach Creek, will be crossed by a bridge, while the highway will be carted across the farther channel on fill. Work is already under way for the bridge foundation and the superstructure contract is expected to be awarded soon.

About 45 per cent of the construction necessary for the circumferential parkway is now under contract.

LABOR NOTES

WAGE SCALES paid by the Warner Construction Co. on the Green Mountain dam of the Colorado-Big Thompson project, are not up to the rates called for in the construction contract and some men have worked more than the 40-hour week specified, the Colorado State Industrial Commission ruled early this month. The commission ordered the company to pay prevailing wages and maintain a 40 hour week.

The commission's investigation was the outgrowth of a strike (*ENR*, Apr. 13, 1939, p. 39) by the CIO Mine, Mill and Smelter Workers Union.

THE STRIKE of highway workers on a Washington state project near Washougal (*ENR*, Apr. 13, 1939, p. 39) was ended Apr. 12 when A. Milne Co., contractor, signed a union agreement.

DELIVERY of material to a number of Chicago construction projects, including one section of the new subway, was held up last week by a strike called by the Building Materials Chauffers Union, AFL, in a demand for higher wages.

MATERIAL deliveries were also hampered at Baltimore, where the city building trades council ordered general contractors on organized jobs to refuse materials delivered by non-union drivers. Most of the Baltimore material firms are open shop.

CARPENTERS in the Providence, R. I., area ended a three day strike early this month when they obtained a wage increase from $1 an hour to $1.175. The agreement does not apply to work already under way.

• • •

Incinerator Reopening Urged at Detroit

Detroit's new incinerator plants are capable of being operated without creating a nuisance, and the plants which were closed down last year (*ENR*, Nov. 10, 1938, p. 573) should be reopened, the committee on incineration of the Detroit City Council has reported.

Incineration, the report held, is the most economical, practical, and sanitary method for disposing of garbage and combustible rubbish. The city's incinerators, however, have not been efficiently operated and as a result there was justified objection, in the opinion of the committee, to their operation. The committee said that plants have been overloaded, firing temperatures below the minimum have been permitted, and garbage trucks have been mishandled.

H. D. Mills (left) assistant highway engineer of Nevada, is listening to **W. J. Isbell** of the Isbell Construction Co., Reno, tell how much money he lost on a big rock cut on the relocation of U. S. Route 40 west of Reno. Mills isn't very sympathetic, for Isbell just landed another big job on the same route, this time through a swamp, which ought to make up for the tough going in the rock cut.

No rest and very little sleep is the lot of **Paul E. Tignor**, construction engineer for the Glenn L. Martin Co., as he supervises work on the company's new two-story 340x685 ft. factory near Baltimore to be completed in 11 weeks, from ground breaking to airplane production. Tignor came to his present job in 1929 after a varied construction career including state highway work, and building construction.

Framed by his own job—**L. J. Foster**, project engineer on the All-American and Gila Canal projects, peers through the Imperial Dam roller gate superstructure in order to view some of the job's massive earthwork. Foster is no newcomer to the land reclamation game, before going on the present project he was construction superintendant on the Uncompahgre project (Colorado) for many years.

MEN AT WORK

Charles Jules Des Baillets, who has been engineer of the Montreal Water Board since 1921, has been elected president of the Canadian Section of American Water Works Association for 1939-40. Born in Switzerland, he emigrated to Canada in 1904, and joined the City of Montreal Water Board service in 1920 after having served 3 years as manager and chief engineer for the municipality of Sherbrooke, P. Q.

Frank C. Amsbary, Jr., followed his father as superintendent of the Champaign-Urbana waterworks, one of the properties of the Illinois Water Service Co. Here he is alongside one of his latest babies, a $75 well cover to replace an $800 well house. A past president of the Illinois Section of the American Water Works Association, Mr. Amsbary is on the ballot for the section's representative on the national A.W.W.A. board of directors.

Dean of American writers on water supply practice and development. **M. N. Baker** of Upper Montclair, N. J., is now devoting all of his time to research and compilation of material for a book. "The Quest for Water." On the editorial staff of *Engineering News-Record* from 1887 to 1933, he has made an intimate study of water supply projects both here and abroad. In 1888 he produced the first manual of American water works.

Gentry Put in Charge Of Tennessee Roads

Continuing an extensive reorganization of the state departments, Prentice Cooper, recently inaugurated governor of Tennessee, has appointed James W. Gentry, WPA administrator at Chattanooga, to the post of chief engineer of the state highway department. Gentry succeeds E. N. Turner, who has been with the highway department in various capacities since 1920.

MEETINGS

AMERICAN SOCIETY OF CIVIL ENGINEERS, conference of student chapters, Manhattan College, New York City, April 22.

AMERICAN GEOPHYSICAL UNION, annual meeting, United States National Museum, Research Council Building, and U. S. Geological Survey Building, Washington, D. C., Apr. 26–29.

AMERICAN WATER WORKS ASSOCIATION, annual convention, Atlantic City Auditorium and Convention Hall, Atlantic City, N. J., June 11–15.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION, annual meeting, Pennsylvania State College, State College, Pa., June 19-23.

AMERICAN SOCIETY FOR TESTING MATERIALS, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 26-30.

REGIONAL AND LOCAL

AMERICAN WATER WORKS ASSOCIATION, section meetings: Indiana, Antlers Hotel, Indianapolis, Apr. 25–26; Florida, Alcazar Hotel, Miami, May 4–6.

AMERICAN SOCIETY OF CIVIL ENGINEERS, section meetings: Texas, Plaza Hotel, Corpus Christi, Apr. 28–29; North Carolina, Carolina Hotel, Pinehurst, Apr. 29; Arizona, Pioneer Hotel, Tucson, May 13.

PACIFIC NORTHWEST REGIONAL PLANNING COMMISSION, annual conference, Olympic Hotel, Seattle, Apr. 27-29.

MARYLAND-DELAWARE WATER AND SEWERAGE ASSOCIATION, annual conference, Fort Cumberland Hotel, Cumberland, Md., May 4-5.

ANNUAL SURVEYORS CONFERENCE, Iowa State College, Ames, Ia., May 5.

EASTERN PHOTO-ELASTICITY CONFERENCE, Cornell University, Ithaca, N. Y., May 13.

MEN AND JOBS

W. P. LINDAUER has resigned his post as maintenance engineer in district 6 of the Iowa highway department to become associate engineer in the National Park Service.

J. E. MCCOOK, JR., has resigned as city engineer of Little Rock, Ark., to join the staff of the Arkansas highway department.

GROVER C. DILLMAN, president of the Michigan College of Mining and Technology and former state highway commissioner of Michigan, has been appointed state budget director of Michigan. He will retain his post at the college until July 1.

D. J. FAIR has been appointed highway director of Kansas. New district commissioners are W. S. Arbuthnot, Roy W. Cox, Willard Mayberry.

JOHN STEPHENS, dean of the University of New Brunswick Engineering School, has been made a member of an advisory commission organized by the New Brunswick government to assist in industrial and economic development of the province. Stephens is the only civil engineer on the board.

D. A. BUZZELL has resigned his post as hydraulic engineer and chief of design department of the Tri-county project in Nebraska to work on flood studies for the Federal Power Commission.

PAUL J. CANNELL has been made chief of the design department of the Tri-county Power and Irrigation District to succeed D. A. Buzzell.

JOHN STEARNS has been promoted from the post of senior engineer for the Federal Power Commission to that of principal engineer in the division of power-flood control studies. He was formerly division engineer for the Metropolitan Water District of Southern California.

JOSEPH F. CITA, engineer-inspector for PWA on the power and irrigation project of the North Loup River Public Power and Irrigation District since 1936, has been transferred to the Johnson Power House No. 1. Cita had been with PWA about a year as engineer-inspector in Kearney, Neb. before he was assigned to the Loup River project. Previously he was connected with various Omaha engineering companies.

FRED C. BARKHURST has been appointed engineer for the Ohio state highway department in charge of Morgan, Noble and Monroe counties, with headquarters at Caldwell.

D. J. SHEA, who was resident engineer for Charles T. Main, Inc. on the high head hydroelectric project being built in the Blue Ridge Mountains by the city of Danville, Va., has returned to the Boston office of Charles T. Main.

ALLEN A. FUTRAL has been transferred from the First New Orleans District of the U. S. Engineers to the hydroelectric section of the Little Rock District.

LEM ADAMS, who resigned in 1933 from the engineering staff of the Union Pacific R.R. to become chief engineer of the Oxweld Railroad Service Co., has been made vice president of the Oxweld company.

THOMAS J. MORRISON, former commissioner of public works at Rochester, N. Y., has been appointed engineer for WPA in charge of Niagara, Cattaraugus, Chautauqua and adjoining counties in New York State. Morrison has worked for the New York State highway department and the federal government.

E. R. MATHEWS, superintendent of the Aberdeen, S. D., water and sewage treatment plants, has been made assistant engineer for the South Dakota state board of health.

R. F. POSTON has resigned his post as assistant engineer in the North Dakota state board of health to join the staff of the U. S. Public Health Service on the Ohio River stream pollution surveys at Chattanooga.

URBAN C. LEIBENGOOD has been made city engineer of Willard, Ohio.

GEORGE C. HASTINGS has been appointed district engineer at Akron, Ohio, for the National Youth Administration.

CHARLES GILLESPIE has been made bridge engineer in division 6 of the Ohio highway department.

GUY W. PINCK, for the past twelve years district engineer at Syracuse of the New York state department of public works, has been appointed comsioner of canals and waterways. Pinck has been in the state service since 1910.

OBITUARY

FRANK R. PATTERSON, head of the Patterson Engineering Co. of Detroit, died Mar. 20 in St. Petersburg, Fla. During the last twenty years he had built many school buildings and industrial structures in Detroit.

FREDERICK W. CARPENTER, former consulting engineer for the Washington Memorial Bridge at Wilmington, Del., and division engineer on the first New York subway from 1900 to 1918, died in Cornwall, N. Y., Apr. 11. A graduate of Cornell in 1884, he had charge of the construction of the terminal and Palisades tunnel for the New York, Susquehanna & Western R. R. in the early nineties.

HARRY S. MCKIBBEN, Trumbull County (Ohio) engineer for eight years, died Apr. 13.

JOHN KILER, 53, civil engineer in Mazatlan, Mexico, died recently in Mexico City.

HARRY H. CERF, chief draftsman for the Carnegie-Illinois Steel Corp. at Gary, died Apr. 10 at the age of 58.

OTHO E. WILLIAMS, 87, Jackson, Wyo., civil engineer, died recently. He was a pioneer surveyor in the state, having surveyed the first road over Teton Pass.

JOEL E. MCLAFFERTY, 47, Omaha structural engineer, died there Apr. 11.

ERSKINE DUNCAN, assistant chief engineer of the Toronto Terminals Ry. Co., died in Toronto Apr. 10. A native of Scotland, Duncan came to Canada in 1904. He was with the Canadian Pacific until the World War, and after returning from overseas he served with the Ontario Hydro-electric Power Commission and the Toronto Transportation Commission.

GLEN DAVID TULLY, 49, superintendent of construction on the Lexington Ave. subway in New York City, died in Wheeling, W. Va., Apr. 8.

J. H. EMRA, senior partner of the Ottawa, Ont., consulting engineering firm, J. H. Emra & Partners, died in Ottawa Apr. 11.

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House Extends FHA

(*Continued from p. 1*)

that land used for rental housing developments under FHA shall be valued as of the time of application for insurance and not, as under the present law, as of the completion of the project.

FHA proponents argued that a valuation based upon the value of the property as it would be in case of foreclosure was fully justified and that the change would cripple FHA activities, but they were finally overruled by a vote of 199 to 142.

Other changes in the act approved by the House included cutting the maximum modernization loan from $10,000 to $2,500 and imposition of a 1 per cent premium charge; raising the present ¼ per cent premium charge on residential construction under $6,000 to from ½ per cent to 1 per cent (at the discretion of FHA); extending authority to insure mortgages on old construction to Jan. 1, 1941; repealing Section 210, which authorizes the insurance of multiple dwelling developments for amounts of from $16,000 to $200,000.

Debate on the bill brought forth the statement that FHA has insured, under Title II (residential construction, but not modernization) some 360,000 loans aggregating over $1,800,000,000, of which only 435 have been foreclosed at a total loss of $160,000.

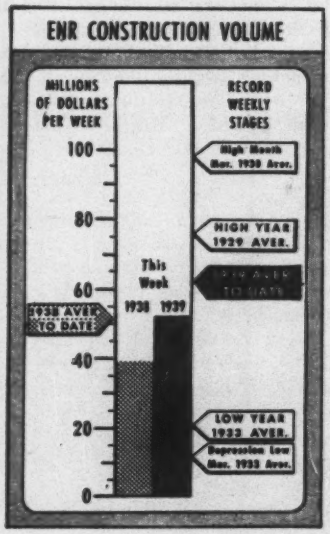
CONTRACTS AND CAPITAL

ENGINEERING construction awards for the week, $53,947,000, are 37 per cent above the volume for the corresponding 1938 week, but 33 per cent below last week. This is the fifth successive week in which current totals have topped their respective 1938 values.

The construction total for the 16 weeks of 1939, $993,540,000, is 22 per cent above the $813,039,000 reported for the corresponding period last year. The year's total is made up of $742,543,000 in public awards, 66 per cent higher than a year ago, and $250,997,000 in private construction, 31 per cent below 1938.

Public awards for the current week are 72 per cent above a year ago, but 26 per cent under last week. Private construction is 29 and 53 per cent lower, respectively, than last year and last week.

In the classified construction groups, all types of awards except commercial building and large-scale housing exceed their respective volumes for the 1938 week. Waterworks, sewerage, bridges, industrial buildings, public buildings, and earthwork and drainage record gains over their totals of a week ago.



New capital for construction purposes for the week, $52,728,000, is 450 per cent above the volume for the 1938 week. The current week's total is made up of $28,597,000 in state and municipal bonds, and $24,131,000 in corporate security issues.

New construction financing for the year to date totals $600,939,000, an increase of 30 per cent over the $463,877,000 reported for the initial 16-week period a year ago.

CONTRACTS

(Thousands of dollars)

	Week Ending Apr. 21 1938	Apr. 13 1939	Apr. 20 1939
Federal	$1,490	$3,575	$2,528
State & Municipal	24,170	56,428	41,696
Total public	$25,660	$60,003	$44,224
Total private	13,770	20,864	9,723
TOTALS	$39,430	$80,867	$53,947
Cumulative 1939 (16 weeks)			$993,540
1938 (16 weeks)			$813,039

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1938 16 Wk.	1939 16Wk.
NON-FEDERAL	$377,345	$327,439
Corporate securities	100,650	66,882
State & Mun. bonds	198,530	181,222
R.E.A. loans	.....	22,211
R.F.C. loans	62,420	234
P.W.A. allotments	—1,091	.....
U.S.H.A. loans	16,836	56,890
FEDERAL	$86,532	$273,500
TOTAL CAPITAL	$463,877	$600,939

FHA MORTGAGES

	Week Ending Apr. 16 1938	Apr. 8 1939	Apr. 15 1939
Selected for appraisal	$22,000	$26,159	$26,000*
Cumulative 1939 (15 weeks)			$337,434*
1938 (16 weeks)			$222,312

* Subject to revision.

ENR INDEX NUMBERS

		Index Base 1913	1826
Construction Cost	Apr.	234.86	112.90
Building Cost	Apr.	196.45	106.20
Volume	Mar.	210	92.

CONSTRUCTION REPORTS

Compiled by BUSINESS NEWS DEPARTMENT
Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, MANAGER
(Daily service also available—Write for details)

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

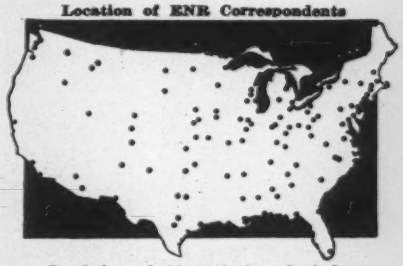
Classes of Construction
(Named in order of Listing)

Water Supply	Unclassified
Sewers, Waste Disposal	Materials, Equipment
Bridges, Grade Cross'gs	Public Buildings
Streets & Roads	Commercial Buildings
Earthwork, Waterways	Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads); BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR); LOW BIDDERS ($500,000 projects and over); CONTRACTS AWARDED

Location of ENR Correspondents



Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD McGraw-Hill Construction Daily

WATER SUPPLY

PROPOSED WORK

Calif., San Luis Obispo—Voted $50,000 bonds WW imprvs. K. Beck, city engr. CD 3/23—ENR 3/30.

Conn., Willimantic — Repairing pump sta. and dam. $100,000. Bonds voted. J. F. Collins, city engr. CD 11/11—ENR 11/17.

Idaho, Moscow—Approved $65,000 bonds, 500,000 rein.-con. water reservoir. H. J. Smith, city engr. CD 3/22—ENR 3/30.

Ky., Newport—J. B. Morlidge, city mgr., extensive revamping pump sta., etc. $100,000. Fosdick & Hilmer, Union Trust Bldg., Cincinnati, O., engrs.

Mass., Fairhaven—F. E. Brown, chn. Bd. Town Selectmen, preliminary survey, WW sys. exten. F. A. Barbour, 73 Tremont St., Boston, engr.

N. Y., Clyde—Water softening unit at WW. $15,000.

N. Y., Portland—Portland Water Dist., c/o J. S. Dunham, Brocton, water supply and distr. sys., c.i. mains, etc., to tie-in with municipal supply of Brocton. $16,000. C. J. Bernhardt, c/o owner, engr. CD 9/2—ENR 9/8.

Okla., Warner — State Bd. Affairs, Oklahoma City, water supply sys. Conners Agricultural College. $32,000. C. A. Stoldt, Oklahoma City, engr.

Pa., Dallas — Boro, 300,000 gal. covered water storage reservoir. $15,000 plus. **Maturity later in 1939 or early 1940.** C. L. Honewell, Shavertown, consult. engr.

Tex., Eagle Lake—W. E. Welford, mayor, defeated bonds, WW installing 100,000 gal. elevated steel tank, steel tower, etc. $110,000. Project dropped. **(Correction**—status.) CD 4/7.

Tex., Shiner—City, c/o A. Richter, Shiner, exten. WW sys., mains, etc. $40,000. J. J. Rady, Majestic Bldg., Fort Worth, engr.

Ont., Port Arthur—S. E. Flook, engr., City Hall, watermains in Van Norman St. and Hodder Ave. $30,000. **Maturity summer.**

BIDS ASKED

Bids Asked April 24

N. J., Keyport—Mayor and Boro Council, artesian well. Adelaide B. Crammer, boro clk.; adv. ENR 4/20.

Bids Asked April 26

★**Conn., New Britain**—Bd. Water Comrs., City Hall, M. W. Brannan, chn., WW exten., pipe line, excavating for filter unit, miscellaneous structures, 2 clear water basins, Contr. 3. $500,000. PWA. G. Molleur, City Hall, engr. CD 3/27—ENR 3/30.

Bids Asked April 27

N. Y., Binghamton—Bd. Contr. & Supply, at office J. J. Casler, secy., general contract screen well and house, imprv. raw and filtered water pump. sta., imprv. boiler plant. $230,000. PWA. CD 3/30—ENR 4/6.

Bids Asked May 1

Minn., Lowry—Pump, pump house, tower, tank, distr. sys. $29,902. PWA. F. B. Schaub, Glenwood, engr. CD 3/6—ENR 3/9.

Bids Asked May 3

Ky., Bloomfield—Contr. 1, distr. sys. and treatment plant; Contr. 2, tank and tower. J. S. Watkins, McClelland Bldg., Lexington, consult. engr. CD 12/29—ENR 1/5, under CA.

Mich., Grand Rapids—At office J. Van Wingen, city clk., laying water transmission line from Lake Michigan to Grand Rapids, Contr. 3; pipe and valve materials, Contr. 4; both Div. A, B, C-1, C-2 and D. Bids Apr. 28 withdrawn. PWA; adv. ENR 4/20. CD 4/3—ENR 4/6.

Bids Asked May 4

N. Y., Syracuse—State Dpt. Educ., Educ. Bldg., Albany, water pump and water lines at Onondaga Indian Reservation. $15,000. T. F. Farrell, State Bldg., Albany, state engr.

Bids Asked May 5

Ia., Winterset — Spillway dam and WW addn. $200,000. PWA. H. R. Green, 417 First Ave. S.E., Cedar Rapids, engr. **(Correction**—type of work.) CD 4/11—ENR 4/13, under Earthwork, etc.

Bids Asked

California—State Procurement Office, U. S. Treas. Dpt., 49-4 St., San Francisco, drilling water wells at Migratory Labor Camps, Yuba City and Thornton, Invs. 7367 and 7368.

Calif., Martinez—Alhambra Union School Dist., P. D. Butcher, clk., drilling, casing water well on school grounds.

Ind., Matthews—J. Dunlap, town clk., WW sys., 60,000 to 75,000 gal. steel tank, c.i. pipe, fire hydrants, gate valves and boxes, turbine pump, water meters, pump house, etc. $30,000. O. T. Hancock, Plainfield, consult. engr.

LOW BIDDERS

★**Mass., Boston**—At office Metropolitan Dist. Water Supply Comn., R. N. Molt, secy., 20 Somerset St., Apr. 13, Contr. 81, cut and cover Aqueduct, Sect. 6 of Pressure Aqueduct, Weston, from M. F. Gaddis, Inc., 6 Beacon St., $560,432. PWA. CD 3/28—ENR 3/30.

CONTRACTS AWARDED

Calif., Oceanside—Constructing Mission Valley Pipe Line, Schedules 1 to 6 (inclusive), 4⅛ mi. up San Luis Rey River, to B. G. Carroll, 4396 Maryland St., and H. L. Foster, 4348 Hilldale Rd., San Diego, $79,662. Bids Apr. 10, awarded Apr. 10. CD 3/24—ENR 3/30.

Calif., San Francisco—P. Utilities Comn., City Hall, laying c.i. watermains, River St. to Lowrie Paving Co., 1540-16 St., $1,217. City furnishes pipe, fittings, etc. Bids 4/5. CD 3/28.

Colo., Montrose—At office City Clerk, water supply imprvs. and extens., reconstructing reservoir and connections at South Canal of Gunnison, to Swartz Constr. Co., Colorado Springs, $21,426. Bids 3/28, awarded 4/7. CD 3/17—ENR 3/9.

Conn., Norwalk—First Dist. Water Comn., 78 Wall St., water tower, 18x18 ft. pumphouse, Gandview Ave. Owner builds. $15,000.

†**D. C., Wash.**—U. S. Eng., 1068 Navy Bldg., hydro plant screen building and chemical building at filtration plant, to H. S. Ward, 1402 Spring Rd. N.W., $9,489. Bids 3/30, awarded 4/4. CD 3/14—ENR 3/16.

Ia., Andrew — Water tower, well, pumphouse, watermains, WPA. $33,000. W. Cullen, Dubuque, engrs.

Mass., Chicopee—G. Webster, supt. Water Dpt., 27 Tremont St., Contr. 2, WW sys., piping and equip., to Norwood Eng. Co., Florence, $18,305. Est. $20,000. PWA. Bids 3/20. CD 3/7—ENR 3/9.

N. J., Morristown—8 in. c.i. pipe line, Contr. 1, to Mary Miele & A. Mercadante, trading as M. Miele, 335 Valley St., South Orange, $22,371. Bids 3/17. CD 3/9.

N. J., Sea Girt—Boro, installing extens. c.i. watermains in various streets, to A. Stanley Mundy & Co., Inc., 52 Main St., Woodbridge, $12,994. Total est. $99,790. Subject to PWA approval. CD 6/15—ENR 6/23.

N. Y., Batavia—J. J. Mahaney, mayor and Common Council, Council Chamber, City Hall, c.i. watermains, part of Contr. 2, to Ryan Stone Co., Inc., Albion, $6,339. Total est. $147,000. PWA. CD 3/21—ENR 3/23.

N. Y., Watervliet—Additional work at water plant, Contr. 1, structural steel, to Westside Structural Steel Co., 19 St.***Contr. 2, to John Duguid & Sons, 1041 Waverly Pl., Schenectady***Contr. 3, to J. M. Stanley, Brookline Ave., Albany. Est. $19,000. Bids 3/30. CD 3/22—ENR 3/16.

N. D., Grand Forks — Additional filters, clarifiers, garage and storage building, to Northern Constr. Co., 509 S. 3 St., $196,161. PWA. Bids 4/4. CD 3/29.

Okla., Mounds—Watermain exten., lowering some present mains, new valves, hydrants, WPA. $24,582. R. Lindsay, Old Court House, engr.

Okla., Vinita—O. Butler, secy. Grand River Dam Auth., 300,000 gpd. filter plant in town of Grove, to L. Sanders, Tradesmen's Bank Bldg., Oklahoma City, $37,230. Est. $59,850. Bids 4/11, awarded 4/11. CD 3/20—ENR 3/23.

★**Pa., Harrisburg**—Dpt. P. Safety, W. T. De Hart, dir., Municipal Bldg., concrete impounding dam, Clark Valley, for water supply sys., to Ed. H. Ellis, Inc., Westville, N. J., $684,753. PWA. Bids 4/4, awarded 4/11. CD 4/5—ENR 4/13.

R. I., Newport—F. I. Green, chn. Water Comrs., 5 W. Marlborough St., Contr. 3, laying watermains, Ellery Rd. and Warner St. Dists., to J. DiCicco, 74 High St., $69,000. PWA. Bids 4/6. CD 3/29.

★**R. I., Providence**—Clerk Bd. Contr. & Supply, City Hall, extens. imprvs. water purification works, Scituate, to Bass Eng. & Constr. Co., 2832 Grand Blvd., Detroit, Mich., $597,600. PWA. Bids 3/20. CD 3/23—ENR 3/30.

Tex., Houston—WW imprvs., to Brown & Root, 4300 Calhoun Rd., $40,410***Sect. 8, to Dellone Constr. Co., Esperson Bldg., $63,457***Sect. C, to Gerald Mora, 1513 15 St., Galveston, $44,495. Bids 2/23. CD 2/10—ENR 2/16.

Tex., Houston—Sub-divisions A, B, C and D, WW imprvs., to C. Everett, 522 Barziza St., $85,386. Bids 3/29. CD 3/20.

Va., Galax — Exten. watermains east side town, WPA. $29,760.

Wash., Waitsburg—Tunnel excav., concrete lining, trench excav. and backfill for water sys., WPA. $17,500.

Wis., Fairchild—Water Supply sys., WPA. $32,230. General Eng. Co., Portage, engrs.

N. S., Kentville—1 m.g.d.c. filtration plant, to General Supply Co. of Canada, Ltd., 356 Sparks St., Ottawa, Ont., $28,151. Awarded 4/1. CD 11/4—ENR 11/10.

Ont., London—Utilities Comn., 2 new chlorinators and rebuilding third, to Wallace & Tiernan, Ltd., 350 Sorauren St., Toronto.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Conn., Bridgeport—Preliminary plans storm and sanitary sewerage sys., Crescent Ave.-Hallam St. sect. $68,845. H. L. Rowland, City Hall, engr.

Ia., Oskaloosa—State, Des Moines, completing 2nd section Oskaloosa Lakes Sewer. $40,000.

Mo., St. Louis County — Lakewood Sewer Dist. defeated $61,000 bonds, sanitary and storm water sewers in Lakewood Sewer Dist., west side of Gravois Rd. from city limits of St. Louis to Mathilda Ave. Project indefinitely postponed. T. P. Barrett, 5029 Langley St., St. Louis, secy. for district. W. C. Berry, 33 North Meramec St., Clayton, engr. CD 3/3—ENR 3/9.

N. J., Trenton—Hamilton Twp. Com., 2090 Greenwood Ave., Contr. 3, 12½ mi. truck and lateral sewers, 4 pump. stas., etc. $450,000. PWA. Rejected bids 3/21 on Contrs. 3 and 4. Kelly & Associates, Inc., 210 E. Hanover St., engrs. CD 4/4—ENR 4/6.

N. Y., Celeron—Bids later in 1939, sewage disposal plant and sewers. $108,000. Wm. S. Lozier, Inc., 10 Gibbs St., Rochester, engrs.

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

PINOPOLIS DAM, S. C.

OWNER: South Carolina Public Service Authority; Santee-Cooper project; Harza Engineering Co., Charleston, S. C., engineers.

PROJECT: Construction of Pinopolis lock, earth dam and power plant, located about three miles east of Moncks Corner, Berkeley County, and about one-half mile east of the Atlantic Coast Line Railroad 32 miles north of Charleston. The dam is to be a heavily compacted rolled fill including 2.7 mi. of dike, max. ht. 75 ft. The lock, 60 ft. wide by 220 ft. long, will have a max. lift of 76 ft. The power plant is to be a reinforced concrete structure containing five 40,000 hp. and one 13,000 hp. vertical propeller turbines, of which three are adjustable blades and three are fixed blade wheels. Completion is scheduled for 600 calendar days, with liquidated damages at $200 per day. This contract covers concrete, earthwork, embedded materials and installation of turbines. In addition to cement, owner will supply the structural steel frame and turbines, both for erection. Foundation rock is a moderately hard limestone. Construction is mostly in low, swampy territory.

BIDS: On schedule 1, for the West dam, lock and power plant, seven bids were received Feb. 28, 1939, ranging from $4,172,180 to $5,896,705. On schedule 2, for the East dam, nine bids were received on the same date, ranging from $138,675 to $226,252. Minimum wages are as follows: Skilled $1.00 per hr.; semi-skilled, 50¢ per hr.; common, 40¢ per hr.

LOW BIDDERS:

SCHEDULE 1

1. Central Engineering Co., Davenport, Iowa...$4,172,180
2. Bates & Rogers Construction Corp., Chicago.. 4,188,320
3. J. A. Jones Construction Co., Charlotte, N. C. 4,204,827

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Clearing, cl. A	206 acre	$100.00	$95.00	$190.00
2. Clearing, cl. B	188 acre	50.00	65.00	95.00
3. Foundation excav. lock & power plant—common	280,000 c. y.	.45	.26	.83
4. Foundation excav. lock & power plant—limestone	110,000 c. y.	1.00	1.40	.83
5. Foundation trimming	25,000 s. y.	1.50	1.50	1.57
6. Creek diversion	L. S.	5,000.00	70,000.00	28,300.00
7. Pumping from lock & power plant found. excav.	6,000 acre ft.	6.00	5.00	5.00
8. Stripping structure & borrow pit sites	410,000 c. y.	.25	.20	.32
9. Borrow for rolled fill dam	1,030,000 c. y.	.24	.25	.33
10. Tailrace overburden borrows	500,000 c. y.	.29	.28	.33
11. Borrow of tailrace marl	700,000 c. y.	.33	.30	.35
12. Pumping from dam cutoff & tailrace borrow fit	4,000 acre ft.	6.00	5.00	1.40
13. Rolling & finishing earthfill	2,230,000 c. y.	.05	.04	.025
14. Adjustment for each additional or lesser rolling	2,230,000 c. y.	.0015	.0015	.0015
15. Earth dike embankment	50,000 c. y.	.17	.20	.26
16. Seeding on dam	18 acre	75.00	150.00	156.00
17. Pressure measurement pipe & fittings in dam	3 sec.	750.00	1,200.00	1,500.00
18. 8-in. full tile on dam	750 l. f.	1.50	.45	1.00
19. 12-in. half tile on dam	4,200 l. f.	1.50	.65	.60
20. Catch basins on dam	8 ea.	100.00	45.00	36.00
21. Conc. cl. A-¾-in. in power plant	1,000 c. y.	9.35	10.76	8.80
22. Conc. cl. B-1 -in. in power plant	25,000 c. y.	9.35	10.58	8.75
23. Conc. c. C-2½ in. in lock	4,000 c. y.	8.65	10.30	8.60
24. Conc. cl. C-2½ -in. in power plant	56,000 c. y.	9.35	10.30	8.60
25. Co c. cl. D-6-in. in lock	90,000 c. y.	8.65	9.56	8.90
26. Conc. cl. D-6-in. in power plant	15,000 c. y.	9.35	10.06	8.90
27. Conc. cl. E in lock	4,000 c. y.	8.65	12.30	10.35
28. Conc. cl. E in power plant	1,000 c. y.	9.35	12.30	10.35
29. Forms—faced in lock	120,000 s. f.	.40	.34	.36
30. Forms—faced in power plant	20,000 s. f.	.85	.34	.36
31. Forms—straight in lock	130,000 s. f.	.40	.30	.34
32. Forms—straight in power plant	330,000 s. f.	.40	.30	.34
33. Forms—curved 1 way in lock	37,000 s. f.	.85	.45	.50
34. Forms—curved 1 way in power plant	50,000 s. f.	.85	.45	.50
35. Forms—curved 2 ways in lock	1,000 s. f.	2.75	.75	1.30
36. Forms—curved 2 ways in power plant	50,000 s. f.	2.75	.75	1.30
37. Reinf. in lock	190 ton	90.00	110.00	79.00
38. Reinf. in power plant	3,600 ton	90.00	110.00	79.00
39. Drilling grout holes, lock, dam & power plant	2,800 l. f.	3.00	3.00	2.50
40. Pressure grouting, lock, dam & power plant	5,000 c. f.	3.00	1.00	1.40
41. Core boring—lock & power plant	1,000 l. f.	4.00	3.00	4.15
42. Installing struct. steel gates, cranes, racks	1,800 ton	50.00	25.00	34.00
43. Generator erection facilities	L. S.	4,000.00	3,000.00	10 000.00
44. Install 40,000 hp. fixed blade turbines	3 ea.	22,000.00	14,900.00	17,730.00
45. Install 40,000 hp. kaplan turbines	2 ea.	22,000.00	18,000.00	26,250.00
46. Install 13,200 hp. kaplan turbine	1 ea.	14,000.00	10,000.00	12,000.00
47. Metal guides, bases & frames—over 200-each	230 ton	190.00	140.00	230.00
48. Misc. ironwork, 5 lf. to 200 lf. per piece	77 ton	250.00	230.00	315.00
49. Misc. ironwork under 5 lf. per piece	7,000 lb.	.20	.12	.16
50. Cast iron pipe	42 ton	80.00	240.00	110.00
51. Galv. steel pipe	47,000 lb.	.15	.20	.14
52. Black steel pipe	96,000 lb.	.13	.15	.13
53. Formed drain holes—3-in. D	300 l. f.	.20	.15	.40
54. Non-metallic conduit—2-in. D	2,500 l. f.	.75	.32	.21
55. Non-metallic conduit—3-in. D	13,500 l. f.	.75	.42	.25
56. Non-metallic conduit—4-in. D	400 l. f.	.75	.52	.34
57. Metal conduit	310,000 lb.	.20	.11	.11
58. Copper water stops	6,300 lb.	.75	.45	.55
59. Rubber water stops	12,600 lb.	.75	.35	.72
60. Copper ground wire	5,800 lb.	.25	.30	.42
61. Observation towers	4 ea.	100.00	150.00	250.00
62. Roadway excav	55,000 c. y.	.35	.20	.37
63. Railway crossing	L. S.	3,000.00	3,000.00	3,875.00
64. Corrugated roadway culvert	20,000 lb.	.15	.10	.20
65. Steel sheet piling	2,600 s. f.	1.20	1.20	1.50

LOW BIDDERS:

SCHEDULE 2

1. W. C. Sheppard, Atlanta.....$138,675
2. United Construction Co. and Maxon Const. Co. of Winona, Minn. and Dayton, Ohio..... 148,112
3. Nello Teer, Durham, N. C..... 155,900

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Clearing—cl. B	150 acre	$50.00	$25.00	$75.00
2. Stripping	80,000 c. y.	.25	.15	.225
3. Borrow for rolled fill in dam	575,000 c. y.	.24	.19	.174
4. Rolling and finishing earth fill	500,000 c. y.	.05	.02	.03
5. Adjustment for each additional or lesser rolling	500,000 c. y.	.0015	.0015	.0015
6. Seeding	8 acre	75.00	150.00	....
7. 8 in. full tile in place	250 l. f.	1.50	.70	.75
8. 12 in. half tile in place	2,600 l. f.	1.50	.50	1.00
9. Catch basins	5 ea.	100.00	50.00	55.00

STREETS, CALIF.

OWNER: Long Beach, Calif.; R. M. Dorton City Mgr.

PROJECT: Grading, decomposed granite base, asphaltic concrete and concrete surfacing, concrete curbing gutters, on 1.3 miles of South St., from Dairy Ave. to Chestnut Ave. Transportation by rail, highway and water is available.

BIDS: Five bids were received February 10, 1939 ranging from the contract low of $28,774 to $32,630. Labor rates are as follows: Skilled, $1.25 per hr.; semi-skilled, $.75 per hr.; common 62½c. per hr.

LOW BIDDERS:

1. Vido Kovacevich, South Gate (contract).... $28,774
2. Ansco Constr. Co. Long Beach..... 30,063
3. Sully-Miller Contracting Co., Long Beach.... 31,627

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Conc. curb	351 l. f.	$0.45	$0.50	$0.50
2. Comb. curb, gutter 6" x 1' 6"	351 l. f.	.68	.65	.65
3. Comb. curb, gutter 6" x 6'	5,862 l. f.	1.10	1.20	1.30
4. 6-in. gutter	13,584 s. f.	.15	.16	.17
5. 8-in. gutter	9,220 s. f.	.21	.21	.22
6. Conc. sidewalk	273 s. f.	.15	.14	.20
7. 8-in. conc. pav	10,226 s. f.	.17	.20	.22
8. Remov. conc	393 c. y.	2.50	2.00	3.00
9. Asph conc. base	2,640 tons	2.47	2.60	2.85
10. Asph conc. type A surf	1,342 tons	2.60	2.85	3.05
11. Decomposed granite base	2,521 tons	1.10	1.00	1.20
12. Subgrade for 3-in asph. conc. pav	130 s. y.	.12	.10	.15
13. Subgrade for 6-in R. C. conc. pav	11,603 s. y.	.10	.07	.05
14. Grading	L. S.	1,200.00	1,576.00	500.00